

UPPER VERDE RIVER WATERSHED



Watershed Restoration Update

Arizona Corporation Commission

December 5, 2017

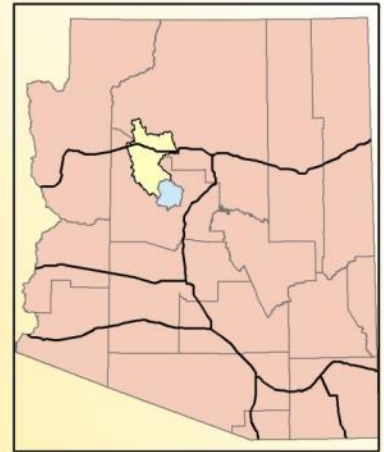
www.yavapaiwatersmart.org

Upper Verde River Watershed Protection Coalition

- ☐ Formal partnership of local governments
- ☐ Purpose:
 - Protect, restore and manage the watershed
 - Protect baseflow of the Upper Verde River
- ☐ Priority: Current and future water supply security
- ☐ Objectives:
 - Groundwater recharge
 - Restore historic grasslands/Watershed Health
 - Water conservation and public education
 - Safe Yield in the PrAMA



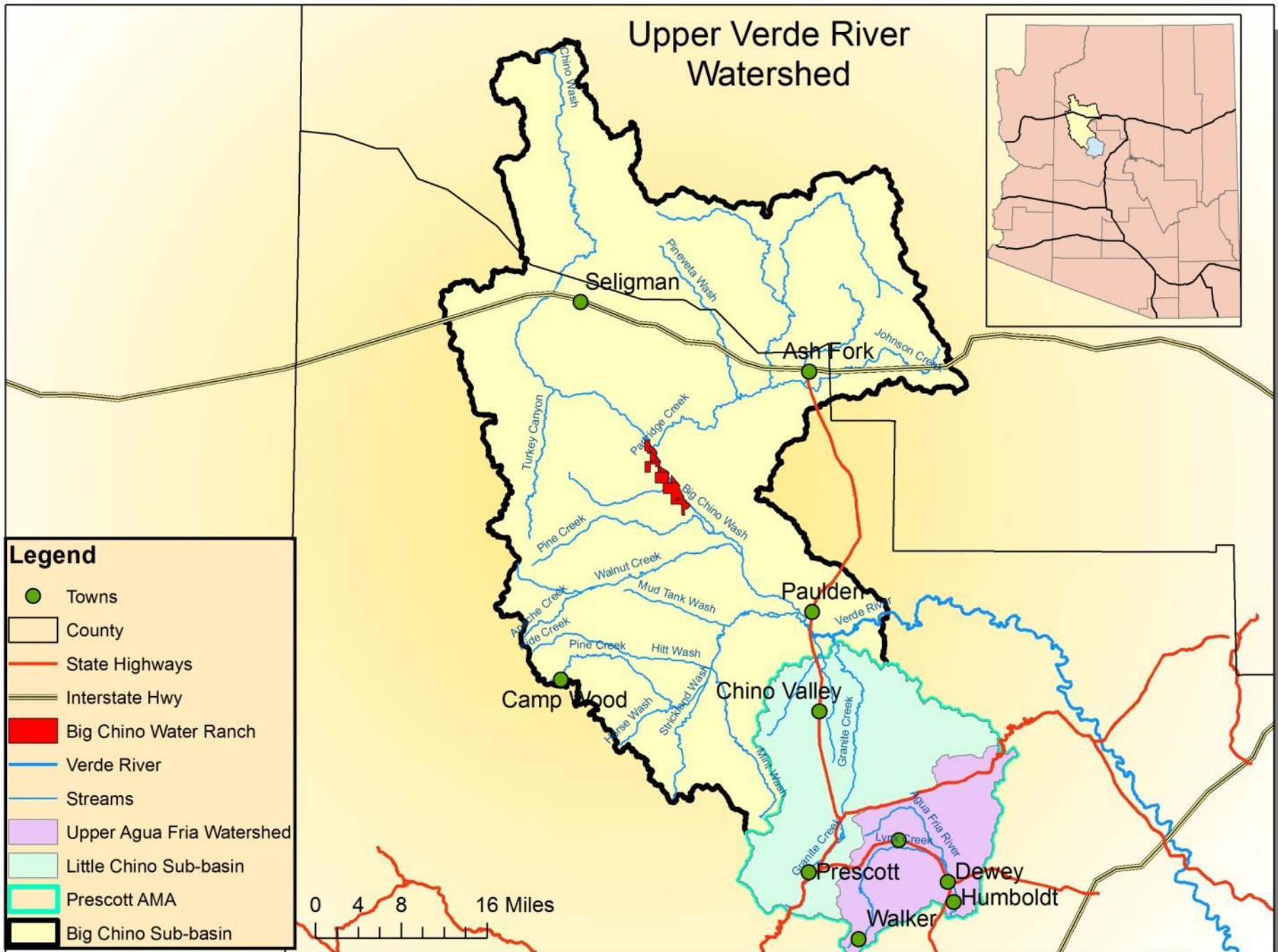
Upper Verde River Watershed



Legend

- Towns
- County
- State Highways
- Interstate Hwy
- Big Chino Water Ranch
- Verde River
- Streams
- Upper Agua Fria Watershed
- Little Chino Sub-basin
- Prescott AMA
- Big Chino Sub-basin

0 4 8 16 Miles



Upper Verde Watershed

- ☐ Precipitation on local watersheds is our only water source (and the source of the Upper Verde River)
- ☐ 2% of total precipitation is recharged (USGS)
- ☐ Watershed health is critical for our existence
- ☐ Overgrowth of Juniper in woodlands; encroachment onto grasslands
- ☐ 962,000 acres of Juniper in Yavapai County



Watershed Threats

- ☐ Catastrophic wildfire
- ☐ Invasive plants reduce aquifer recharge
- ☐ Loss of wildlife habitat
- ☐ Increased erosion
- ☐ Soil/Grassland degradation



Watershed Restoration - Problem

- ❑ Watershed Restoration is **EXPENSIVE**
 - ❑ Watershed treatment goal of 25,000 acres per year
@ \$550 per acre = \$13,750,000 per year
 - ❑ High cost of transportation
- ❑ Harvested biomass has little or no value – currently
 - ❑ Lack of markets for Juniper biomass utilization
 - ❑ Under-developed forest products industry
- ❑ Bureaucracy and regulation slow progress

Solutions

☐ Biomass industry development

- ☐ Biocoal, biochar, wattles, soil erosion, landscape amendments, essential oils
- ☐ Streamline bureaucracy & reduce regulations
- ☐ Government incentives
- ☐ Policy adoption by state, local and federal governments that supports biomass utilization and attraction of industry

☐ Guaranteed biomass supply & demand chain is essential for markets

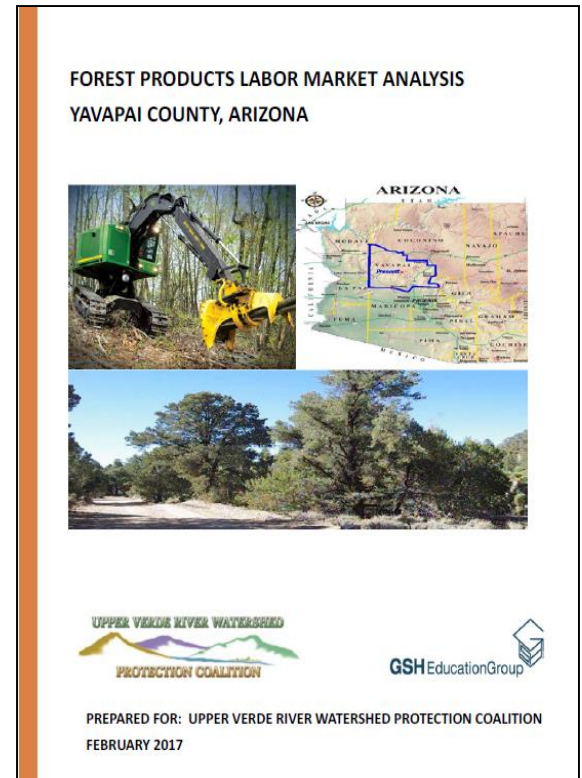
- ☐ Biomass Cooperative
- ☐ Chino and Kaibab Restoration projects on National Forest lands
- ☐ Process to remove material from state trust lands



Rural Economic Stimulus

Yavapai County New Jobs (Labor Market Analysis)

- ❑ Harvesting 25,000 acres/year
- ❑ Direct Jobs
 - ❑ 94 private sector jobs
 - ❑ 16 public sector jobs



Upper Verde Coalition Projects

☐ Developed a plan

- ☐ Watershed Initiative and multi-stakeholder Watershed Taskforce
- ☐ Watershed Restoration and Management Project Plan
- ☐ Scenario planning sessions with stakeholders and industry experts (woodland/grassland health identified as priority)
- ☐ Initial workshops with industry and stakeholders



- ☐ Brush management and habitat improvement grant from Natural Resource Conservation Service (AZ Game and Fish)

Coalition Projects (cont.)

- ☐ Woodland harvesting demonstration and data collection (with DFFM, Cross U, K4 and OO Ranches)
- ☐ Feedstock analysis to quantify wood resource (with ADFFM)
- ☐ 2016 Labor Market Analysis to evaluate labor readiness (with AZ Commerce Authority)
- ☐ 2017 bio-coal co-fire at Drake Cement (with ADFFM)
- ☐ 2016 Arizona Water Protection Fund grant for erosion control (Juniper silt dams/wattles)



Coalition Projects (cont.)

- ❑ 2016 DFFM Western LSR Erosion Control grant for Yavapai County with the Coalition (Juniper silt dams/wattles)
- ❑ 2017 Wood Innovations grant to determine feasibility of locating a biomass conversion facility in Yavapai County
- ❑ Establishing a multi-stakeholder forestry cooperative
- ❑ Stakeholder engagement
 - ❑ Watershed Taskforce
 - ❑ All Hands, All Lands Conferences
- ❑ 2018 Wood Innovations Grant with DFFM (proposed)
Mining application using wattles with Juniper chips and biochar for stormwater management and heavy metal filtration

Importance of Partnerships

Key to accomplishing goals and implementing projects

Ranching Community & Landowners, Arizona Department of Forestry and Fire Management, Natural Resource Conservation Service, Arizona Game and Fish, Prescott National Forest, Triangle and Chino Winds Natural Resource Conservation Districts, Arizona State Land Department, US Forest Service Region 3, Arizona Water Protection Fund, Enginuity, Drake Cement, Dava & Associates, The Nature Conservancy, AK Resources, Prescott Wildland Urban Interface Commission, Ponsse, Arizona Commerce Authority, DR Systems, Forest Energy Group, Northern Arizona Procurement Company, CDW Consultants, Office of the Governor, Arizona Commerce Authority, NACOG, local ranchers, United States Bureau of Reclamation, Sonoran Institute,

Contact

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